Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A production method for producing Group-III-element nitride single crystals comprising:

heating a reaction vessel containing at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal and at least one Group III element selected from the group consisting of gallium (Ga), aluminum (Al), and indium (In) to prepare a flux of the metal element; and

feeding nitrogen-containing gas into the reaction vessel and thereby allowing the at least one Group III element and nitrogen to react with each other in the flux to grow Group-III-element nitride single crystals,

wherein the Group-III-element nitride single crystals are grown while the flux of the metal element and the at least one Group III element are stirred ~~to be~~ together with the nitrogen-containing gas and mixed together by rocking the reaction vessel.

2. (Canceled)

3. (Currently amended) The production method according to claim 1, wherein the reaction vessel is rotated or the flux of the metal element and the at least one Group III element are stirred ~~to be~~ together with the nitrogen-containing gas and mixed together using a stirring blade formed of at least one material selected from the group consisting of Y_2O_3, CaO, MgO, and W, in addition to being rocked.

4. (Previously presented) The production method according to claim 1, wherein a substrate is placed in the reaction vessel, a thin film of Group-III-element nitride is formed on a surface of the substrate beforehand, and Group-III-element nitride single crystals are grown on the thin film.

5. (Original) The production method according to claim 4, wherein the single crystals are grown with a liquid mixture of the flux containing the at least one Group III element and the at least one Group III element flowing continuously or intermittently in a thin layer state on a surface of the thin film formed on the substrate.

6. (Original) The production method according to claim 4, wherein before the Group-III-element nitride single crystals start growing, the reaction vessel is tilted in one direction, so that a liquid mixture of the flux and the at least one Group III element is pooled on a bottom of the reaction vessel on a side to which the reaction vessel is tilted and thereby the liquid mixture is prevented from coming into contact with a surface of the thin film of the substrate.

7. (Original) The production method according to claim 4, wherein after the Group-III-element nitride single crystals finish growing, the reaction vessel is tilted in one direction, so that a liquid mixture of the flux and the at least one Group III element is remove from a surface of the thin film of the substrate and is pooled on a side to which the reaction vessel is tilted.

8. (Currently amended) The production method according to claim 1, wherein the flux and the at least one Group III element are stirred ~~to be~~ together with the nitrogen-containing gas and mixed together by heating a lower part of the reaction vessel to generate heat convection in addition to the rocking of the reaction vessel and the heating of the reaction vessel for preparing the flux.

9. (Previously presented) The production method according to claim 1, wherein the at least one Group III element is supplied to the flux while the Group-III-element nitride single crystals grow.

10. (Previously presented) The production method according to claim 1, wherein the at least one Group III element is gallium (Ga), and the Group-III-element nitride single crystals are gallium (Ga) nitride single crystals.

11. (Previously presented) The production method according to claim 1, wherein the alkali metal is at least one selected from the group consisting of lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr) while the alkaline-earth metal is at least one selected from the group consisting of calcium (Ca), strontium (Sr), barium (Ba), and radium (Ra).

12. (Currently amended) The production method according to claim 1, wherein the flux of the at least one metal element is a sodium flux, a mixed flux of sodium (Na) and calcium (Ca), or a mixed flux of sodium (Na) and lithium (Li).

13. (Canceled)

14. (Currently amended) The production method according to claim [[1]]12, wherein the ratio of the calcium (Ca) to the sum of the sodium (Na) and the calcium (Ca) when calcium is present, or the ratio of the lithium (Li) to the sum of the sodium (Na) and the lithium (Li) when lithium is present, is in a range of 0.1 mol% to 99 mol%.

15-16. (Canceled)

17. (Previously presented) The production method according to claim 1, wherein the at least one Group III element and nitrogen react with each other under conditions including a temperature of 100°C to 1200°C and a pressure of 100 Pa to 20 MPa.

18. (Previously presented) The production method according to claim 1, wherein the nitrogen(N)-containing gas is at least one of nitrogen (N_2) gas and ammonia (NH_3) gas.

19. (Canceled)

20. (Original) The production method according to claim 4, wherein the thin film formed on the substrate is single crystals of Group-III-element nitride or is amorphous Group-III-element nitride.

21. (Original) The production method according to claim 4, wherein the largest diameter of the thin film formed on the substrate is at least 2 cm.

22-23. (Canceled)

24. (Previously presented) The production method according to claim 1, wherein impurities that are intended to be used for doping are allowed to be present in a liquid mixture of the flux and the at least one Group III element.

25. (Original) The production method according to claim 24, wherein the impurities are at least one selected from the group consisting of calcium (Ca), a compound containing calcium (Ca), silicon (Si), alumina (Al_2O_3), indium (In), aluminum (Al), indium nitride (InN), silicon nitride (Si_3N_4), silicon oxide (SiO_2), indium oxide (In_2O_3), zinc (Zn), magnesium (Mg), zinc oxide (ZnO), magnesium oxide (MgO), and germanium (Ge).

26. (Previously presented) The production method according to claim 1, wherein transparent single crystals are grown.

27. (Currently amended) The production method according to claim 1, wherein the flux and the at least one Group III element are stirred ~~to be~~ together with the nitrogen-containing gas and mixed together, which is carried out in an atmosphere of inert gas other than nitrogen first and then in an atmosphere of the nitrogen-containing gas that is obtained by substituting the inert gas by the nitrogen-containing gas.

28. (Original) The production method according to claim 27, wherein the inert gas is substituted by the nitrogen-containing gas gradually.

29. (Canceled)

30. (Currently amended) The production method according to claim 3, wherein the flux and the at least one Group III element are stirred ~~to be~~ together with the nitrogen-containing gas and mixed together using the stirring blade, which is carried out through a rotational motion or a reciprocating motion of the stirring blade or a combination thereof, or a rotational motion or a reciprocating motion of the reaction vessel with respect to the stirring blade or a combination thereof.

31-36. (Canceled)

37. (Withdrawn and previously presented) An apparatus that is used in a production method for producing Group-III-element nitride single crystals according to claim 1, comprising:

a means for heating a reaction vessel for preparing a flux by heating at least one metal element selected from the group consisting of an alkali metal and an alkaline-earth metal contained in the reaction vessel;

a means for feeding nitrogen-containing gas to be used for reacting a Group III element contained in the flux and nitrogen to each other by feeding the nitrogen-containing gas into the reaction vessel; and

a means for rocking the reaction vessel in a certain direction, wherein the means tilts the reaction vessel in one direction and then tilts it in an opposite direction to the one direction.

38. (Canceled)

39. (Withdrawn and previously presented) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim 1,

wherein the reaction vessel has a cylindrical shape and includes two projections that protrude from an inner wall thereof toward the circular center, and a substrate placed between the two projections.

40. (Canceled)

41. (Withdrawn and previously presented) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim 1,

wherein the reaction vessel is formed of or coated with at least one material selected from the group consisting of AlN, SiC, and a carbon-based material.

42. (Canceled)

43. (New) A reaction vessel that is used in a production method for producing Group-III-element nitride single crystals according to claim 1,

wherein the reaction vessel has a cylindrical shape and includes two projections that protrude from an inner wall thereof toward the circular center.